Midshipman

LOUISIANA NATIVE IRIS

FOREWORD

. . . . So you are interested in planting Louisiana Native Irises in your home garden. You can grow them with little difficulty. Once you get started, it will be a fascinating experience. Your interest will grow if you like color, variety, and beauty in flowers.

The information and recommendations given in this circular are based on many years of actual experience and study. The cultural recommendations made are intended for Louisiana conditions.

The Louisiana Irises are attracting nationwide interest and are becoming very popular. Nurseries are now propagating this rainbow flower for distribution.

The Cover Picture: Hybrid Louisiana Iris variety registered as "Midshipman," declared the best Iris at the Annual Show held in April, 1949, by the Society for Louisiana Irises. This variety was originated by the author in the spring of 1947 from a cross of Lockett's Luck x unknown variety.

(Photography by Mrs. Joseph C. Roberts.)

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Louisiana Native Iris

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"Iris," a Greek word meaning rainbow, is symbolic of the beautiful family of flowers. In Greek mythology the goddess Iris was the personal attendant and messenger of Juno. She is frequently referred to as the "Goddess of the Rainbow." The poet, Virgil, described "Iris of saffron wing, displaying against the sun her robe of a thousand hues."

The "flag" or "iris" is mentioned in many historical writings. In the Book of Job, one of the three friends, Bildad, the Shubite, asks, "Can the rush grow up without mire? Can the flag grow without water?"

The Iris as a genus is confined to the Northern Hemisphere but is found around the globe from the edge of the Arctic region to the Gulf of Mexico and the Mediterranean. Since the cork-like seeds are commonly water borne, the ancestors of the present day Louisiana natives probably moved South on the flood waters of long ago. Many forms of Irises grow naturally in many areas of the United States. This publication, however, deals solely with Louisiana native Irises.

The Louisiana native Irises have gained national acclaim and are becoming more popular with the amateur collectors and gardeners, both for their variety of color and beauty of flower. The blooming season starts in March on the Gulf Coast and moves northward with the season. The low areas of Louisiana along the edges of its numerous streams have been planted with a wide distribution of the floating native Iris seeds.

As a garden flower, the wild Irises do well under a wide variety of soil and garden conditions and landscapes. They will thrive on highlands and on lowlands. Bog culture is ideal if landscape permits. The shallow edge of a lake or pond is a most naturalistic spot for Louisiana Irises.

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DISTRIBUTION AND DESCRIPTION

Native Irises of various types are widely distributed in Louisiana, but are more numerous in the Gulf Coast area.

"The Iris Center of the Universe" was the phrase coined by the late Dr. John K. Small, authority on plant life, to describe the rich, wild Iris fields of South Louisiana. Dr. Small, as curator of the New York Botanical Gardens, was one of the first to describe these fields and to call attention to their magnitude, to the great variety of the flowers, and to the unusual size of the plants.

Under best growing conditions in their native habitat, some flower stalks over six feet tall have been found, and some as low as four inches. This fascinating and popular wild flower ranges in color variations from white through all the lavenders, blues, and violet to deepest purple. There are also many color values of pink, rose, red, bronze, yellow, bi-tone, bi-color, and even plicatae.

The vicinities of New Orleans, Thibodaux, Houma, Morgan City, Prairieville, and Abbeville are melting pots of rainbow colors, the natural hybrids. These are the hybrids resulting from natural crosses of two or more of the following three types: tall blue (Giganticaerulea), rust-red (Fulva), and dwarf blue (Foliosa).

The Abbeville fields are located near a converging point of several streams where the low blooming (Foliosa), the medium-size rust-red (Fulva), and the tall blooming blues (Giganticaerulea) meet. The resulting natural hybrids are masses of rainbow colors. The area is referred to locally by Iris collectors as the "Iris Heaven."

TYPES OF NATIVE IRISES

In discussing types of native Irises, the author proposes to give only a general description of five types found in Louisiana. He makes no attempt at botanical classification. Much research work needs to be done by botanists and geneticists on systematic classification of native Irises.

Following is a brief description of five groupings of types found in Louisiana:

1. Rust-red (Fulva)—Small flowers with many blooms of rust-red shades on erect stem about 30 inches in height. Both petals and sepals droop and have no signal patch. It occurs in color values of crimson, pink, and even clear yellow. It grows abundantly in the lowlands of Mississippi and Red River valleys, being more numerous and larger in size near the Gulf Coast. This iris was first described in 1812. It occurs naturally as far north as Missouri and Ohio.

2. Abbeville Types—The Abbeville Red or "Super" Fulva is found in southwest Louisiana near Abbeville. These giant reds are in a class all their own. The color range is from red to yellow and brown to deep purple. The wide overlapping petals and sepals are sometimes marked with a long crest or signal patch. Sometimes they are void of any signal markings. Most blooms have a wonderful substance and may be of crepe-like texture or a velvety sheen. The style arms are short. The foliage is broader and the rhizomes are larger than the regular fulva.

3. Dwarf (Foliosa) (Including Flexicaulis, Brevipes, and Mississippiensis)—Medium size flower of much substance with a color range from blue shades to white. Blooms may occur on zig-zag or fairly straight stems low in the foliage. Plants and rhizomes are much smaller than other forms. Also, it blooms later and usually grows in shadier places than others. It is found growing naturally in the prairie and bluff areas of Louisiana. These occur from Vermilion Parish north to West Carroll Parish, and east of the Mississippi River from Ascension to West Feliciana Parishes.

4. Giant blues (Giganticaerulea)—Large, recurving flower parts ranging in color from blue and purple to white. Flowers with vertical petals (standards) and horizontal sepals (falls) are borne at different levels on very tall, erect stalks. These giant blues are found along the Gulf Coast of Louisiana on the edges of bays fed by fresh water and bordering on salt water marshes.

5. Pine Flat Types (Virginica, including Versicolor, Shrevei, and Carolina)—Medium size flowers ranging in color from deep blue to white with heavily veined fragrant blossoms on lateral branching slender stems. The dark green foliage has a decided mid rib. This characteristic is not found in any other Louisiana native Iris. It is not known to cross pollinize with other forms of Louisiana native Irises. Natural habitats are in low pine flat areas of southeast and western Louisiana from Calcasieu to Caddo Parish. East of the Mississippi River it occurs abundantly north of Lakes Pontchartrain and Maurepas. The soils in these areas are more acid than the alluvial and bluff areas where other Louisiana Irises grow naturally.

HORTICULTURAL VARIETIES AND HYBRIDS

Hybrids found in the wild, as well as those produced in the garden by hybridizers, number into the thousands. As these hybrids make good, they may be given a variety name. Some of the best Irises have no name, while others have several names. Many of the named hybrids have been registered and the descriptions are recorded with the American Iris Society.

Following are the show winners as declared by the Society for Louisiana Irises at the past seven annual Iris shows held:

1943 SEEDLING	Shown by Mr. W. B. MacMillan Abbeville, Louisiana
1944 BAYOU SUNSET	Shown by Mr. W. B. MacMillan Abbeville, Louisiana
1945 NEW ORLEANS	Shown by Mrs. E. G. Feusse Lafayette, Louisiana
1946 PLUM GOOD	Shown by Mr. Ira S. Nelson Lafayette, Louisiana
1947 LONGFELLOW'S GABRIEL	Shown by Mrs. J. A. Geary Lake Charles, Louisiana
1948 LOCKETT'S LUCK	Shown by Miss Elmina Thibaut Napoleonville, Louisiana
1949 MIDSHIPMAN	Shown by Mr. and Mrs. Joe G. Richard Baton Rouge, Louisiana

No attempt is made here to describe varieties. This information may be obtained from publications listed as references on the last page and others.

PROPAGATION

You will be interested in increasing the quantity of your best varieties.

There are two practical methods of perpetuating or increasing Iris stock via vegetative and seed propagation.

VEGETATIVE REPRODUCTION. Iris plants increased by this method will produce plants identical to the variety from which they were propagated. This is the only sure way of maintaining an established strain of Iris without variation of bloom and plant. Propagation by seed may vary greatly from the parent plant unless it is a pure strain. **Vegetative increase** may be obtained by (1) rhizome separation, (2) rhizome cuttings, and (3) flower stalk offshoots. The ideal time of the year for success with the first two

practices listed is after the dormant season in late summer and early fall (August to October in Louisiana). The other good time is in early spring at blooming season (March to May in Louisiana). The advantages of spring propagation are that it is easier to identify plants when in bloom and there is less rotting of the rhizomes. However, planting may be done at any season of the year.

(1) **Rhizome Separation:** Under natural conditions, single rhizomes usually multiply two- or threefold in a year, but have been known to multiply 21-fold, spreading radially. When a single rhizome forms a bloom stalk, it usually produces also two side shoots. These shoots form new rhizomes and continue the process of natural increase. However, the original rhizome usually deteriorates as increased growth takes place. Similar multiplication will occur naturally under good garden conditions without mechanical separation, but the process can be speeded by man's help.

One clone from a two-year-old seedling plant in the writer's garden developed radially into twenty-one side rhizomes. This is unusual, but imagine how much increase could be obtained in several years if a plant like this could be separated and given more room to develop. However, most plants will produce an average of three to six side rhizomes the first year or two. By this method, they may be increased to as many as 15 to 20 plants in one year.

Mechanical separation is easily done by breaking off the side rhizome from the main one and transplanting immediately. The main rhizome with the bloom stalk is then likely to sprout out more shoots from the dormant buds at the leaf scars. The ring-like scars on the rhizomes indicate where the leaves were attached. At each scar there is a bud or potential new plant. (See Plate I)

(2) **Rhizome Cuttings:** Cuttings of two to three-inch length sections of rhizome should be planted in a propagating media, such as vermiculite or well-rotted leaf mold, peat moss and sand, or sphagum. Do not plant cuttings too deep. Just barely cover and keep moist in a cool, shady place. Be careful not to over water, or soak, as this may cause them to rot. As each new shoot reaches from 4 to 6 inches in height, it should be carefully removed and planted. The rhizome cutting, new shoots, and all new roots formed should be carefully removed from the growth media and placed in a bucket of water until planted. With a sharp knife separate the new plant with all of its new roots from the rhizome section. A portion of the rhizome may be sliced off in this process. The new plant should then be transplanted in a well-prepared fertile

plant bed and shaded until well grown out. The rhizome cutting should be replanted in rooting media to develop additional plants. The process can be repeated until all the buds on the cutting have been developed.

(3) **Flower Stalk Off-shoots:** This method of propagation may supplement the others if a maximum increase of a desirable rare variety is wanted. The off-shoots on the stalk are similar to those of the daylily. However, the flower stalk buds at the leaf nodes must be stimulated into growth. Do this by cutting the stalk while it is still green, after blooming, but before the seed pods form. Then place the flower stem in a container of water so that the water line is slightly above the base of the leaf node. Keep in shade. Another method is to place the flower stalk almost horizontally in a sand propagating box. When the off-shoot and its roots have developed, remove it from the flower stem and transplant.

PROPAGATION BY SEED

Seed pods will develop on most wild Irises. If pollinated, each pod produces from several to about 60 cork-like seeds. This method of increase is very important to Iris hybridizers in developing new forms and colors, but it is slow. All the seeds in a pod may not germinate the first year.

Gardeners who desire large quantities of plants for mass plantings may also be interested in using seeds, if trueness to variety is not important. Most Louisiana Irises are hybrids and their seedlings will vary in color, size, and form.

If Iris seeds are left on the stalk to fully mature and harden, they germinate very slowly. The fully matured, late harvested, dried-out seeds will go into what is known as a "rest-period" and it may take several years for all of them to sprout. However, you can hasten germination of Iris seed by harvesting them when the seed pod is still partially green. Planting at harvest time (June and July in Louisiana) will produce a higher percentage of seedlings by fall and early spring.

Do not plant seed in garden beds because weeds will choke the plants and heavy rains may wash seeds away.

A better plan is to plant in flats, cans, or other containers, partially filled with a good propagating media, such as vermiculite or leaf mold and sand. Good drainage is important. This is best accomplished by making small holes in the base of cans or other containers.

Plant seeds approximately ½ inch deep, water thoroughly, and place in a cool, shady spot. By all means protect them from rats. Keep moist until all are sprouted, but do not over-water as this will cause seed to rot. As the seedlings emerge to 5 or 6 inches in height, lift them carefully, avoiding damage to the tender new roots, and transplant to a well-prepared rich soil, high in organic matter. Space plants about a foot apart in the beds.

TRANSPLANTING

The best seasons of the year for transplanting wild Irises are fall and spring, although transplanting can be done at any time. During hot weather wild Irises do not grow and are more susceptible to rot when rhizomes are exposed to direct hot summer sun. Most of their growth occurs during rather cool weather. Getting irises transplanted and established in the garden by late summer or early fall increases your chances for a bloom crop the next spring. In collecting plants in the wild, or digging them in the garden (during blooming season, best for identification) you may use either whole fans (large blooming stalk rhizomes with side shoots), or small single-side rhizomes about 3 to 4 inches long. If identity is to be kept, attach label at digging time.

If plants are to be shipped a long distance, or held over for some time after digging, you may pack them in moisture-retentive material, such as damp sphagum or vermiculite. The stored food in the rhizome keeps it from deteriorating very fast.

Set the plants about a foot apart in the garden. Shallow planting is best. The top of the rhizome should be level with the top of the soil in the bed. You should then mulch the beds with an inch of well-rotted organic matter, such as plant leaves, peat moss, sugarcane bagasse, cotton gin mote, rice hulls, or rotted saw dust. Then water thoroughly and repeat occasionally, if dry weather prevails. After transplanting the young seedlings which are small and delicate, give them special care until they become well established.

CREATING NEW IRISES

Amateur hybridizers among Iris growers are increasing by leaps and bounds. They are creating new Irises by cross-pollinating and by self-pollinating desirable flower varieties. It is easy to do and the wealth of possible new varieties is endless. Once you get started, it is just as much fun as walking the swamps to find new natural hybrids. Hybrids usually occur where many different types

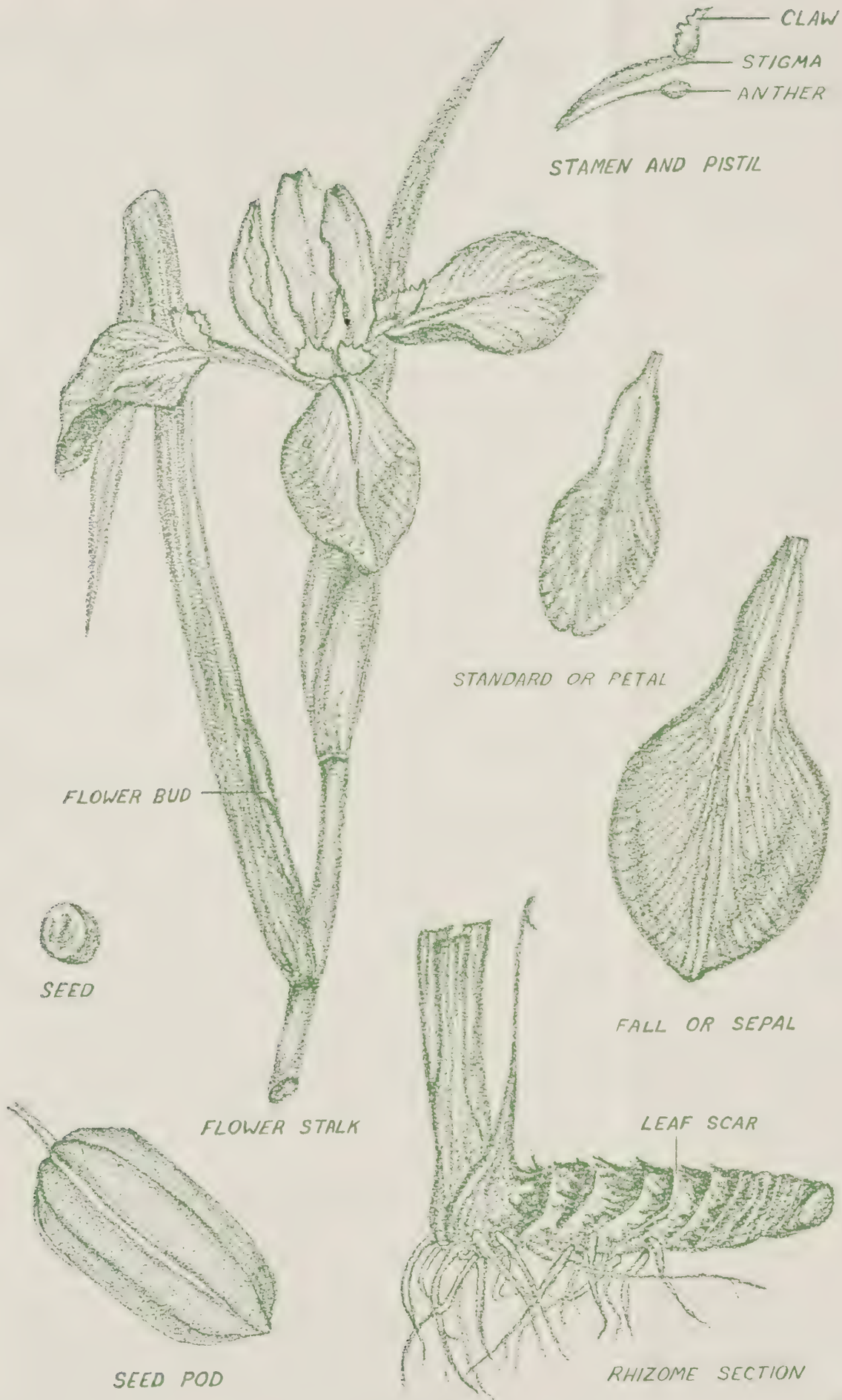

PLATE I

L. Boss

of Irises have grown for some time close together in one small area. There are few such natural hybrid areas in south Louisiana. So collecting in the wild as a means of getting new floricultural varieties will require a lot of time and travel. Buying them from nurseries may be costly.

When you make crosses and produce seedlings of your own, the pleasure in gardening increases. Waiting for your own seedlings to bloom is like waiting to open a Christmas package. If the bloom and plant are "super" and make good, then the thrill approaches that of parental pride.

The technique of hybridizing is very simple. A little practice and experience will get you on the way to Iris breeding. (Study the flower parts on Plate I). Just before the fully-grown flower bud on the mother stalk opens, it should be carefully forced open. This may be done by firmly holding the base of the flower with the left hand, lightly pinching the tip of the bud with the right hand and twisting it open. Immediately you should remove the male parts, or stamens, so as to avoid accidental contamination. A pair of eyebrow tweezers is an ideal instrument for this. At this stage the stigma (female part) is highly receptive. It is a simple trick then to expose the stigmatic surface by raising the claw and thoroughly dusting the exposed surface with mature pollen, removed from the desired male plant. To do this you simply rub a well-opened stamen on the stigma and the flower is pollinated. This completes the operation except that the flower may be bagged to prevent later contamination by insects or other natural agents. Some hybridizers just break off the sepal instead of bagging the crossed bloom.

The next step is to tag, label, and date the cross, example: Fulva x Foliosa—3/24 '49. Female or mother plant is always listed first. In case of self pollinating a bloom, use this symbol ⓧ; example: Bayou Sunset ⓧ—3/24/49.

Tying the stalks to small stakes may keep them from bending to the ground. This will prevent seed pod rot and make them less accessible to rats. Iris seeds are relished by rats.

Plant breeding, of course, presents a problem of inheritance. In all of the wild Irises there are the important heredity factors of color, size, form, and substance of flower, disease resistance and other plant characteristics. However, you do not have to be a professional geneticist to develop outstanding new Irises. When you do develop a good hybrid, it can be rapidly propagated vegetatively. If it is a healthy, vigorous grower and well-adapted individual of good flower qualities, you have it.

Selecting desirable parent stock will be somewhat of a problem until you have gained some experience, but you may be lucky if you try.

SOIL PREPARATION AND CULTIVATION

Soil and cultural requirements of the native Irises are opposite to those of the bearded Iris. Natives thrive best in slightly acid or sour soil with abundant moisture, whereas the bearded do their best in alkaline or sweet soil and extra good drainage. Highland, lowland, or even bog conditions are satisfactory.

In locating the plant beds in your landscape plan, you should remember that wild Irises require moisture and humus. Most varieties thrive and bloom best in full sun to semi-shade, but not full shade. Some of the Foliosa types do well in partial shade. Necessary protection from the hot summer sun should be provided by mulching. Good seedbed preparation prior to planting, then mulching over the rhizome and around the plants immediately after planting will reduce the need for cultivation.

Deep plowing or spading followed with thorough harrowing or raking are essentials to good soil preparation. Deep preparation improves the physical condition of the soil, increases its ability to absorb and retain moisture, makes the natural and supplementary supplies of plant food more readily available, and helps to destroy unsightly and harmful weeds.

Very little cultivating will be needed except to control weeds. A small, narrow spring tooth garden tool is ideal for cultivating. If a hoe is used to cultivate in the fall and spring, care should be taken not to cut the shallow rhizome. Under no circumstance should you use a hoe in the Iris bed during mid summer when the shallow dormant rhizomes are so easily disturbed.

Thin plantings of summer shade-producing legume plants such as soybeans or crotelaria, may be made after the Iris-blooming season. This will protect plants from sun, conserve moisture, and control weeds.

FERTILIZATION

Plenty of organic material such as animal manures, compost, or green legume crops turned under with the soil, plus commercial fertilizer, are necessary for a good Iris bloom crop. Poultry yard manure is the most effective for Iris.

The well-rotted organic material should be mixed or worked into the soil while preparing the beds and also spread lightly over

the rhizomes just after planting. Use at least a good wheelbarrow load per 6 to 8 square feet.

Supplemental plant food in the form of commercial fertilizer should be applied in several applications both in early fall when roots start developing and very early spring, about two months before blooming. A nitrogen fertilizer, such as nitrate of soda, sulfate of ammonia, or ammonium nitrate is recommended for very early fall at the rate of one pound per 100 square feet. This should be thinly spread between the plants.

A complete fertilizer (nitrogen, phosphorus, and potash) applied two months before blooming season (January and February) will increase your chances for quantity and quality of blooms. Any complete garden fertilizer available in your local stores should do. However, an 8-8-8, 6-12-6 or 5-10-5 is recommended. Apply this mixture around the plants at the rate of two to three pounds per 100 square feet.

IRRIGATION

Water is essential for natural distribution of Louisiana Irises, for the establishment of young plants, and for a good bloom season.

Moisture is most needed during early fall when plants are getting established and in early spring for about two months prior to blooming. This usually coincides with rainy seasons in Louisiana.

During these periods, if weather is too dry, it may be necessary to irrigate thoroughly. One thorough soaking of the Iris beds is better than an occasional light sprinkling. Soils high in organic matter store more moisture for dry seasons. This is why Irises do so well in a fertile soil where a lot of humus and liberal mulch has been added.

Planting the Irises in depressed beds will facilitate irrigation. This is even more important in the drier hill sections of Louisiana. Bog culture, when landscape plan permits, will help solve this problem.

DISEASES AND INSECT PESTS

Louisiana Irises have few enemies. Some of them are:

1. **Sceleratium Rot or Mustard Seed Fungus.** It occurs in the soil and may attack susceptible Iris plants at the ground under warm and wet soil conditions. A fungicide such as Semesan or

sulphur applied as a dust, or in solution, may help to reduce the damage. An effective way to control this soil fungus, if it becomes a serious problem, is to move the Iris to another location temporarily and treat the soil with formaldehyde. Remove the dead foliage and burn before spraying or dusting to admit sunlight to the base of the clump.

2. **Leaf Spot or Rust.** Some of the earlier blooming varieties are susceptible to this disease. The infection usually starts at the tip of the leaves and works downward. You may have to discard the most susceptible varieties. Removal and burning of all the diseased leaves as soon as they appear will help to control it. A spray of Fermate, or wettable sulphur, may also check this disease.

3. **Thrips**. This minute insect sucks the sap from the Iris bloom. When it occurs in large numbers the blooms wilt. Control by spraying or dusting with a 5% DDT when the insect first appears.

If the orioles fly in at Iris blooming time, they may go for the nectar in the Iris flower, and tear them up. How to stop them is a problem.

FLOWER SHOW PREPARATION

How to Prepare Native Irises for Exhibition:
(1) Three or four days before the show, go over the garden and decide what you will exhibit. (2) Label each stalk. (3) Wrap each bud loosely in wax or cellophane paper and fasten the wrapping securely with pin or paper clip. This is done to prevent damage by orioles or insects and to prevent breakage in transporting. (4) In late afternoon before the show, cut the stalks 3 inches from ground. Place the stalks in a container of water, but do not let water cover the buds. Leave in a cool, shady place for at least 12 hours to condition. (5) Remove the stalks from water and place them in a large flat cardboard box for transporting to the show. They may be re-soaked if time permits prior to exhibiting. Upon arrival at the show, get entry tags and tie them on stalks. Place each stalk in container of water where it is to be shown. Then remove paper covering from buds and allow to unfurl.

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